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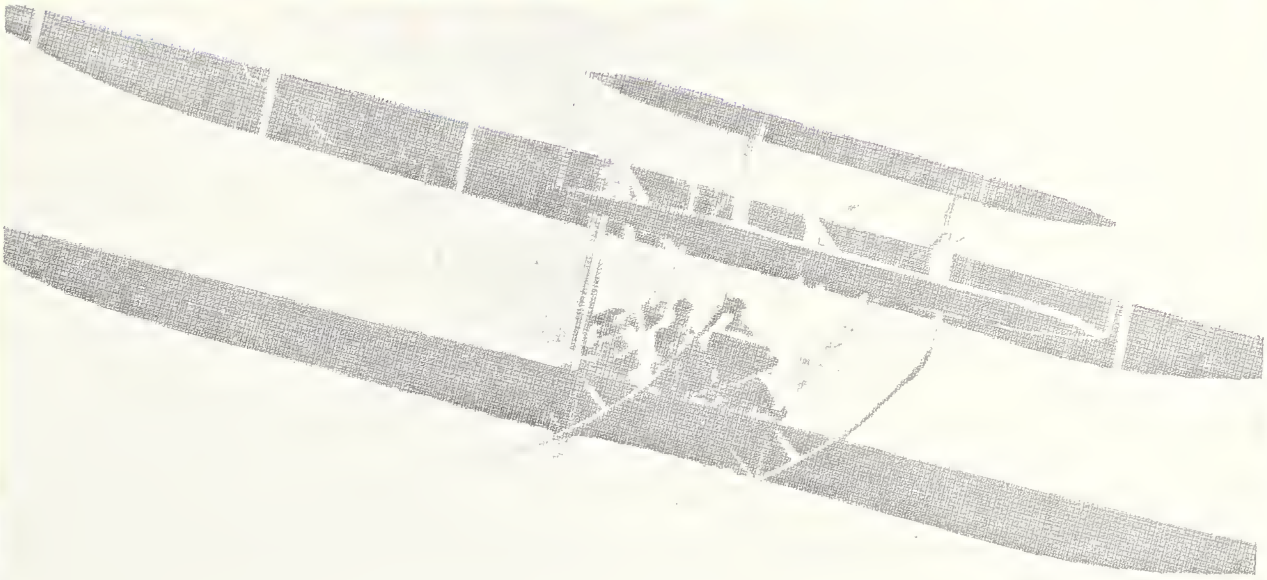

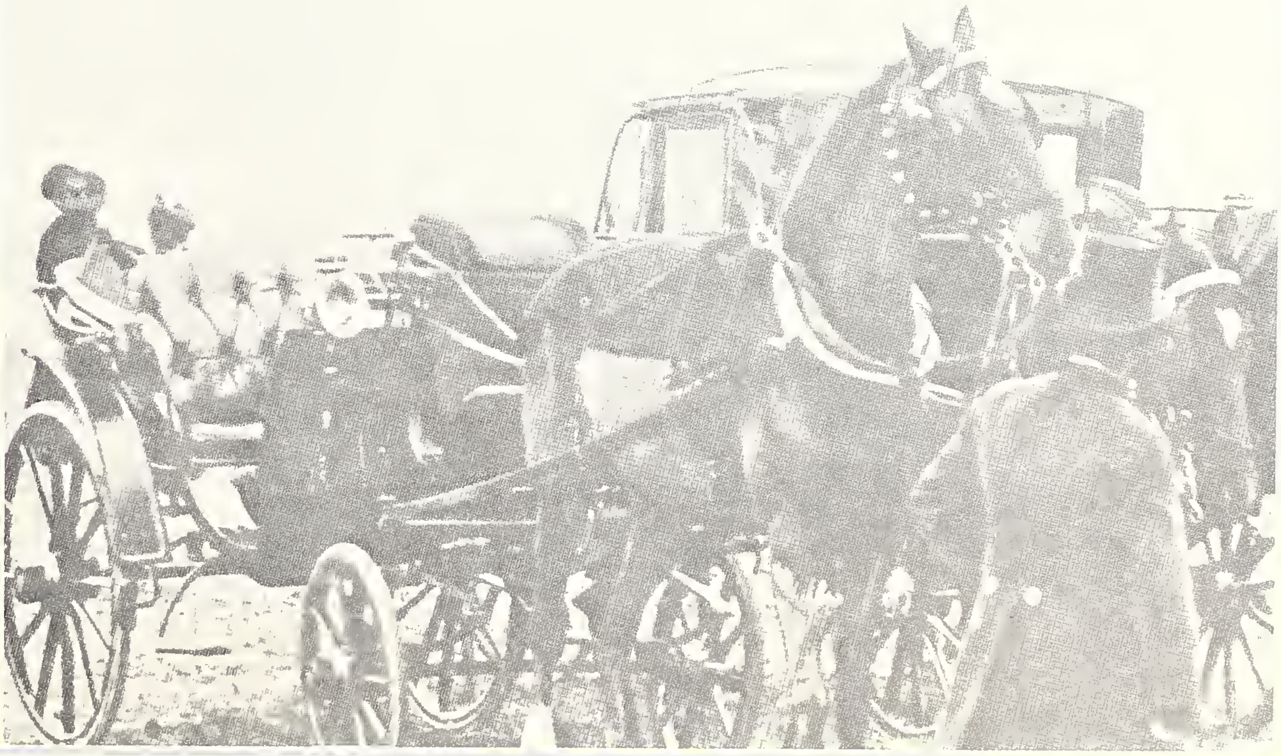

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# COMPUTERNEWS

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**Cover Story**

This month's cover photo of a Wilbur and Orville Wright aeroplane of 1907 refers to our cover story. The inventor of WYLBUR named his program after the famous Wright brother. Photo credit goes to the Radio Times Hulton Picture Library.

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# THE NEW WYLBUR

As reported in last month's December/January issue of *COMPUTERNEWS*, UTCS now runs version 5.1 of WYLBUR, replacing version 3.0. With 5.1, we offer a WYLBUR reference card, an updated USERBOOK module, totally revamped Users' Guides and manuals and short courses, described in the next article.

How is 5.1 WYLBUR enhanced?

### Remote Job Entry

As with 3.0, the new WYLBUR from a terminal provides one of the best RJE computing environments at U of T. Users may still access WYLBUR through traditional terminals. Now, through full-screen terminals, they can enter programs and browse the executed results. (Gone are the days of lineups at card readers and hours spent sifting through reams of hardcopy output.) Finished programs can be subsequently printed at any UTCS high speed printer.

### Full-screen Editing

The 5.1 version of WYLBUR has a significant full-screen editing feature for 3270-type terminals. This feature allows WYLBUR users of 3270-type terminals even more convenience and speed when editing.

### Command Language

The WYLBUR command language permits automatic string searches, file editing and job submission. Also available are public EXECfiles, containing WYLBUR commands that

- register and scratch user datasets
- print manuals on high speed printers
- offer online information on ABEND codes.

They all reside in the main WYL.LIB dataset and have corresponding members in the library documentation dataset WYL.EXECDOC.

With 5.1, users can define their *own* commands - up to 24 of them - saving much typing time.

5.1 also offers two, user-friendly commands:

- ON ERROR, which will trap most error occurrences in an EXECfile;
- ON ATTN which will intercept an ATTN while executing an EXECfile.

HELP, now a *primary command* in the 5.1 version, facilitates adaptation to the WYLBUR environment by new users.

The LOCATE command has been improved. Users may now locate all of their jobs with one command, instead of trying to remember which jobs they printed and/or purged. MSGCLASS=H is no longer valid. Rather a /*JOBPARM QUEUE-FETCH card is used in the JCL. Or users may specify RUN ... FETCH.

The PRESS command has also been enhanced. WYLBUR uses a special format to store datasets, reducing storage requirements *and* charges. PRESS - the process that converts card images to WYLBUR format - and UNPRESS - the reverse procedure - now work with entire partitioned datasets. Previously, with 3.0, each individual member had to be dealt with one at a time.

### 'Job Fragmentation' Eliminated

Users of 3.0 were frustrated, to say the least, with 'job fragmentation' - a problem that beset us after the switch from MVT to MVS two years ago. MVS created separate output listings for each SYSOUT file in a

continued...

**THE NEW WYLBUR** continued

job, effecting a waste of time and paper.

Under version 5.1, we have installed a locally modified 'interface' to JES from OBS - the people who supply WYLBUR. This modification has eliminated 'job fragmentation.'

**Conclusion**

We invite your comments on the new WYLBUR. Suggestions may be sent through WYLBUR, using the SUGGEST facility. As well, let us know if you want to see something in WYL.LIB, be it an EXECfile you have created or a file you would like *us* to create for general use.

Happy computing with WYLBUR! See your CSR for additional details.

*Dave Reed*

## WYLBUR SHORT COURSES

WYLBUR short courses will be held at the following times and locations:

Conversion Seminar, Feb. 9/81
Scarborough College Computer Center,
1:00 to 2:30 pm

Conversion Seminar, Feb. 10/81
Erindale College Computer Center,
1:00 to 2:30 pm

Conversion Seminar, Feb. 11/81
Information Office, Engineering Annex,
1:00 to 2:30 pm

Intro to WYLBUR, Feb. 23-25
Erindale College Computer Center,
1:00 to 3:00 pm

Intro to WYLBUR, Mar. 2-4
Information Office, Engineering Annex,
1:00 to 3:00 pm

Advanced WYLBUR, Feb. 26-27
Erindale College Computer Center,
1:00 to 3:00 pm

Advanced WYLBUR, Mar. 5-6
Information Office, Engineering Annex,
1:00 to 3:00 pm

Please contact the UTCS Information Office at 978-4990 in order to register for any of these courses. The Intro to WYLBUR courses lead right into the Advanced WYLBUR courses, so you may register for both if you wish. Please note that there is no limit on registration for the Conversion Seminars, but that a limit of 15 applies to both the Introduction and the Advanced WYLBUR courses.

*Dave Reed*

## THE VIVA SOLUTION

Over the past two years at UTCS, we have made several changes to services, changes designed to increase our ability to serve users effectively. These changes include the consolidation and re-equipment of our facilities, the establishment of the Computing Services Representative and Product Line Group functions and the VIVA development project. Previous issues of *COMPUTERNEWS* have described the new CSR and PLG functions and have reported on our consolidation efforts. This month we begin a series of articles describing the VIVA project at UTCS.

The computing and communications indus-

continued...

**THE VIVA SOLUTION** continued

tries have been evolving at a rapid rate. Several trends relating to the principal areas of hardware technology, software development, application productivity and the industry economies have been identified. The VIVA project at UTCS presents the opportunity to apply the knowledge of these trends to the unique requirements of a large educational organization.

The goal of VIVA is to interface the user and his environment to other users, other data and other services in a fashion which will promote effective solutions to the users' problems. VIVA provides a flexible and adaptable service which can be configured to the users' requirements and skills, not vice versa. Through this service VIVA proposes to improve the quality and reduce the costs of computing at the University of Toronto through the 1980s.

The next article, *Background For VIVA,* describes general developments and trends in the computing and communications industries which had to be taken into consideration when planning alternative computing services for UTCS.

Next month, we will continue our VIVA series with a description of how these technological advances and trends can best be applied at UTCS. There will also be a detailed description of the VIVA concept and design and a discussion of such factors as hardware capabilities, cost, software development and user education programs.

*Terry J. Wood*
*Ian F. Darwin*

# BACKGROUND FOR VIVA

Any analysis of alternative computing services must take into account the current state of technology and expected trends. Existing computer technology reflects a dramatic and steady rate of improvement over the past three decades. Known laboratory developments are likely to sustain these trends through the 1980s; we are therefore unlikely to experience many surprises with respect to the computer technology available over the next few years. The total environment with which the designer of an information system must deal can thus be estimated with some confidence to have characteristics reflecting the trends summarized below.

1. Computing processors and main storage device costs are decreasing at a rate of 20% per year as a result of improvements in micro-electronic circuit technology. This technology is first introduced into the marketplace in the smaller micro- and mini-based systems since the larger more complex systems require a longer development and production cycle and greater field testing.

2. There are *scale* cost-benefits with respect to peripheral equipment (mass disk storage, volume printing, etc.) and software installation support. However, the cost-benefit of size of scale with respect to central processing units is diminishing. The historical quadratic relationship between costs and central processing unit power is becoming more and more linear. This trend is offset to a large extent by the increase in costs of software and staff support (see items 3 and 4).

   There are *volume* cost-benefits with respect to the smaller, micro-based computing equipment. This trend will accelerate as vendors capture an increasing segment of both traditional and turnkey computing markets.

3. Software is increasing in price and will become a major part of the cost of a computing system in the future. Historically, the high expense of software

continued...

**BACKGROUND FOR VIVA** continued

development and maintenance has been built into equipment costs. However, because of competition from manufacturers of hardware-compatible systems, who do not have to bear the software development cost burden, the original system manufacturers are unbundling their software and pricing it separately. This process will continue.

4. Personnel costs are increasing at a rate of 10% annually. For data processing personnel (programmers, system analysts, project managers) the increase is even greater because the demand for these people currently exceeds the supply by more than 15%. It is anticipated that the demand will continue to outstrip supply at an increasing rate in the 1980s.

   One of the principal concerns in the data processing industry is the lack of progress in improving programmer productivity. This is considered a major bottleneck in the development of user applications and in the exploitation of cost-benefits that can be derived from the declining equipment costs. This lack of productivity not only compounds the increased personnel costs, but inhibits the development of services for people who wish to use computers for activities not directly associated with the computing sciences.

The following points outline some of the implications of the preceding industry trends:

- As a result of declining hardware prices, distributed processing is becoming economically feasible and will be desirable for some applications. However, the management of distributed processing functions and the software and hardware support for users of distributed processing systems are problems that need to be solved.
- Automated office systems and data processing systems and services will be merged in the future. Automated office systems will be an outgrowth of the stand-alone word processing systems available on the market today. In the future, these units, computing terminals and supporting computer systems will all be interconnected by a communications network.
- Communication networks and communications costs will increase with the implementation of distributed processing and automated office systems. The principal role of the data processing organizations will change from operating a highly centralized service to operating and managing communications networks and network services.
- Computer applications will become increasingly pervasive throughout organizations as existing applications evolve into new areas, as intelligent terminals become more cost-effective and as implementation methodology and languages grow more powerful. Among the most important functions affected by these trends will be operational support activities such as interactive data entry and inquiry, word processing and office automation.

Having analysed these trends, we can now evaluate three distinctive alternatives for providing effective and economical computing facilities through the 80s.

1. The centralized approach is the traditional method for providing computing services. It is typified by a small number of large computer complexes with professional staff who plan, operate and manage the facilities.
2. The decentralized approach is comprised of a large number of small (often micro- or mini-) computers functioning in a totally independent and often specialized manner. They are operated, planned and managed by

continued...

**BACKGROUND FOR VIVA** continued

the user groups they serve.

3. Distributed computing is a hybrid of both the centralized and decentralized approaches.

There are advantages and disadvantages to each approach. The centralized approach has as its best advantage the ability to share resources. These resources not only include the hardware, but also the operations, management and user services personnel associated with the provision of the hardware, the software and the data required by users of the central complex. The ability to share these resources allows a centralized service to exploit the economies of scale and apportion segments of large and expensive equipment and services to users who would otherwise be unable to afford them.

Unfortunately, the centralized approach leads to excessive complexity as the number of devices and services increases, and a larger portion of the resources becomes consumed in self-management. In order to use the services effectively, the individual user must develop more sophisticated skills and is continually required to support those complex changes for the benefit of the entire user community.

The decentralized approach permits more modest resources to be dedicated to a particular function or application. Its principal advantage is its simplicity, and since greater numbers of these units are required, it allows the exploitation of the associated volume economies in the case of similiar units. It permits a high degree of user autonomy, the connection of foreign devices and the ability to configure the system for maximum efficiency in the environment where it is required. Unfortunately, this approach does not allow sharing of important computer-related activities - software, user advising, data that may be needed by colleagues, expertise that may be required for successful operation or the access to expensive hardware resources that the user cannot afford.

It is clear from the preceding that neither fully centralized nor decentralized computing services is the ideal approach. A combination of the two approaches could be the best arrangement. A system constructed as a hybrid of satellite computing facilities that have access to the central site is termed a distributed system.

A distributed system allows the network of computing installations to exploit effectiveness of specialization. The centralized facility can enhance those services it does best and the user can customize his machine to best suit his requirements. To realize its full potential, this approach would require a large amount of effort. The benefits that would be derived from a distributed solution promise to offset this effort, both in terms of the cost and the quality of services offered.

Without a comprehensive plan to address these issues, decline in equipment costs and user demands will develop a system which is largely distributed in nature, but which will tend to acquire the disadvantages of both approaches. Users, becoming dissatisfied with the centralized facility, will acquire equipment based on vendor claims and will assume the existence of functions and facilities that may not be provided. The centralized support staff, in the interests of the user community, will be driven to provide the missing functions for numerous vendors, often with different and incompatible operating philosophies and implementations. This will lead to an inefficient use of money and resources, and high user dissatisfaction with the capabilities of the services acquired.

This article has outlined some of the principal issues associated with the operation of centralized and decentralized services. These issues do not merely concern the hardware and its location, but also the many other facets of providing computing services.

*Terry J. Wood*
*Ian F. Darwin*

# LEWG: PORTRAIT OF A USER

*From N. Collins [2364,5404] on February 14, 1980 at 12:26 pm*

*Hello Paul. When you talk to Mike Gates, tell him there is a file called BENTHOS.DAT in my directory that contains biomass estimates for each of the organisms that show up in the LEWG BENTHOS DATA. Thanks for your help on mailing data, Paul. I will need my water wings and my patience. There are only two bridges open over the salt river in Phoenix and the average travel time over them is several hours. Have a good week. Nick.*

Nick Collins' message to former Erindale CSR Paul Shindman will come clear in this month's feature about **Lake Ecosystem Working Group (LEWG).** This distinguished and successful group from the U of T Zoology Department is a continuing customer of UTCS. It includes Nick Collins, mentioned above, who was on sabbatical in Arizona back in February 1980. (He was experiencing flood conditions at the time.) He maintained contact with the data of the other seven members of LEWG through Paul, now *COMPUTERNEWS* editor, and through the facilities of the DEC-10 MAILsystem.

LEWG's aims are shared by freshwater research groups all over the world, and by you too, indirectly, if you're a typical Ontarian:

- to provide a basis for managing small, inland lakes, of which Ontario has approximately 1/4 million
- to provide a basis for understanding what will happen to these lakes under regimes of (1) acid rain, (2) fishing pressures, (3) cottage buildup and (4) varying nutrient input.

So, if you enjoy fishing, boating and swimming in central Ontario or if you are a lakeside property owner, be assured that LEWG at U of T works on your behalf to preserve the beauty and usefulness of these inland lakes.

UTCS interviewed three LEWG members: Ann Zimmerman, expert on chemical and nutrient aspects of lakes; Gary Sprules, expert on zooplankton; and Roy Knoechel, expert on phytoplankton and algae in lakes. **(See the glossary at the end of this article.)**

These three dedicated people enthusiastically described a traditional modus operendi - summer field sessions, or should we say *lake* sessions, followed by winters at U of T during which time collected data is collated, put into computer-accessible form, entered online and submitted to statistical and other analyses. That is where the conventional aspect of the research ends. LEWG members have a unique approach which has distinguished them in freshwater studies the world over. This uniqueness enabled them to be well and productively funded between late 1978 and 1982 by NSERC, The Natural Sciences and Engineering Research Council.

**UTCS:** Who are the other members of LEWG?

**LEWG:** Along with Ann, Roy and Gary there is Henry Regier, experienced in field studies (fish) and in mathematical modelling. He also has a background in the funding of large research projects. Jyri Paleheimo is a statistician and modeller. Harold Harvey is an expert on fish, particu-

continued...

**LEWG: PORTRAIT OF A USER** continued

larly the collecting of field data. (He has a great knowledge of their biology and ecology.) Mike Gates, who came a year or so after we began, serves as coordinator of all data that were collected by individuals, boiling them down into a useful form and making them generally computer-accessible. Nick Collins is in charge of the benthos program, i.e., collecting information on bottom organisms.

**UTCS:** What are the practical applications of your research?

**LEWG:** By coming up with a *model* of how small, inland lakes work, we want to be able to make sensible recommendations about how many new cottages should be built on a given lake; about what will happen to a lake as acid precipitation increases; about how much fishing a lake can sustain.

**UTCS:** Where are you collecting data?

**LEWG:** We're examining 37 representative lakes, from Peterborough up to Sudbury. We have data from lakes in and around Muskoka, Haliburton, Parry Sound, North Bay and Killarney Provincial Park.

**UTCS:** Why are certain lakes chosen for study?

**LEWG:** We wanted to incorporate a range of different sizes of lakes, lakes with varying water chemistry, lakes located in different geological basins, lakes with variations in the kinds of fish found in them, lakes with a range of exposure to acid precipitation and lakes with a range of cottage development. In other words, we wanted a set of lakes that incorporated variation in several key factors that we felt were important in governing the structure of lakes, the flow of energy through them.

**UTCS:** What does 'structure of a lake or energy flow' mean?

**LEWG:** Energy flow in a lake is illustrated by the 'food chain' - algae are eaten by zooplankton which are in turn eaten by small fish which are in turn eaten by big fish.

Between the low end - the algae - and the final level of large fish there's a lot happening. We want to know precisely *what*. We intend to learn what factors affect this efficiency of flow. We know now that there isn't a direct relationship - i.e., if you double the amount (biomass) of algae you don't necessarily get double the amount (biomass) of big fish.

**UTCS:** How is your approach unique?

**LEWG:** We are attempting to understand the *structure* of lakes, how they process energy. Our approach is different in two ways. First, our biological approach involves concentrating not on individual *species* in the aquatic environment, as is done traditionally, but on some *measure* of these organisms that reflects their ecological role in the system. The characteristic that we feel reflects this ecological role best is SIZE, a general category.

Let me make an economic analogy. If you study the cost of living, the state of the marketplace, you're concerned with, say, the price of bread. You're not really concerned with the prices of brand X versus brand Y versus brand Z. You simply have to know about bread, a general category, to understand the situation (i.e., how much you can buy with the money you have or how many people you can feed, etc.).

Secondly, our chemical approach involves concentrating not on *total* amounts of chemical components and critical nutrients in the system, as has been done by other groups, but on the *biologically available* chemicals and nutrients. Ann Zimmerman showed us how to measure biologically available amounts rather than total amounts of chemicals.

All this ends with an understanding of the critical features that govern an ecosystem, that govern energy flow through lakes, which is ultimately what nutrient input, acid precipitation, cottage buildup and fishing pressure are going to affect.

continued...

**LEWG: PORTRAIT OF A USER** continued

**UTCS:** Why use the computer?

**LEWG:** After we survey the lakes and collect a range of basic chemical, physical and biological data, we collate them and enter them online. All members of LEWG have accessed this data and have been involved in statistical analyses of the variation in the dataset from one lake to the next, from one season to the next, from one year to the next. We need the computer - we have a *very* complex dataset, one of the best in North America. It evolved from hundreds and hundreds of man-hours in the field and in the lab. With 40 sampling sites, being sampled 8 or 9 times per season for about 50 different parameters... And multiply that times three for the three years of our current study!

**UTCS:** How do you use the computer?

**LEWG:** We use statistical packages like multiple linear regression and we look for patterns, relationships and trends that we think are of interest. The computer can simultaneously look at the variants in a very wide number of parameters.

Let's face it, the computer can essentially plot A through Z for us - it can 'think' in 3 dimensions, or 5 or 10! If you give it enough factors, it's bound to explain *everything.*

In addition to looking for relationships, we use the computer for modelling. We use it to 'create' a *model* lake in which one can vary all kinds of parameters and look for the kinds of results that might occur, without having to go out there and test it on every lake.

We also use the computer as an educational tool. Some of our graduate students have used the dataset as part of their theses. It's available to them online in catalogue form.

**UTCS:** Ultimately, what can you do with this approach?

**LEWG:** Well you either look at *one* parameter in a lot of lakes or at a *lot* of parameters in one lake. What we aim to do is to *reduce* the number of parameters you must look at - to the greatest degree possible - so we can then look at many parameters that make functional sense in a lot of lakes at the same time.

**UTCS:** To what do you attribute your success?

**LEWG:** We're successful for several reasons. First, the U of T Zoology Department has people with various areas of expertise. In a project like ours no *one* person could possibly cover all the bases.

Secondly, in our Zoology department there are people who are interested in plants and chemistry. Since our focus is freshwater studies (U of T has a tradition in this), there's room for people with diverse and unique interests.

Thirdly, we share a common goal and work as equals. It's not often that you find a group of academics like ourselves that doesn't fall into the 'primadonna' syndrome.

**UTCS:** Thank you for your time, and we'll think of you gratefully this summer while we're out on our water wings!

*Pat Longstaff Smith*

### Glossary

**algae: any of various primitive, chiefly aquatic plants that lack true stems, roots and leaves. Included among algae are some seaweeds.**

**benthos: the bottom of a lake, especially at considerable depths; the organisms living on the lake bottom**

**ecosystem: an ecological community together with its physical environment, considered as a unit (i.e., a lake and all that lives in it)**

continued...

**LEWG: PORTRAIT OF A USER** continued

**phytoplankton: floating, minute, aquatic plants**

**zooplankton: floating, often microscopic, aquatic animals**

# OUCC

UTCS is pleased to announce that it will host the twelfth Ontario Universities Computing Conference. Attendance is not restricted to individuals from Ontario universities. In fact many attendees are from various institutes of higher learning across Canada as well as from the United States.

As this year's host of OUCC, we are following the example set by Queens University - we're keeping conference costs to a minimum by seeking sponsorship from vendors of computer equipment and materials. Through this sponsorship we hope to offer a program of interesting speakers and low-cost accommodation that would otherwise be impossible.

As well as providing a forum to discuss regional issues, this year's OUCC will be expanded to cover topics of more general interest. Speakers have been invited from Canada and the United States. At present, we have made tentative arrangements for speakers to address the following topics:

- The Evaluation of the University Computer Centre Director
- The Issues of Women in Computing
- The Development of TELIDON and Videotext systems
- Legal Issues of Computer Abuse
- The Use of CAI (PLATO) in the University Environment
- The Professional Researcher and Computing

The conference will be held from June 2-5 in downtown Toronto. It has been necessary to limit conference registration. Therefore we urge those planning to attend to request registration information as soon as possible from:

The Program Committee
OUCC 12
255 Huron Street
Room 350
Toronto, Ontario
M5S 1A1

*Don Gibson*

# UNIVERSITY OF WATERLOO PASCAL

The University of Waterloo version of Pascal is now available on HSJS. After examining various implementations of Pascal for the IBM system, UTCS decided to install the Waterloo version.

Like other language processors available on HSJS, Waterloo Pascal is ideally suited for student use. It compiles programs quickly. It generates good compile-time and run-time error messages and checks for a wide variety of errors. It executes programs fairly quickly. It terminates gracefully.

While there is currently no standard version of Pascal, a draft standard has been developed by the British Standards Institute and the International Standards Organization and will probably become the industry standard. The Waterloo implementation

continued...

**WATERLOO PASCAL** continued

conforms to this proposed standard.

This implementation also contains additional functions for converting real numbers to strings (RTOS) and strings to real (STOR) as well as an arc tangent function with two arguments.

UTCS has also added other features which make our implementation conform to those of PL/C, SP/k and WATFIV. These features are summarized below.

- standard control cards. Waterloo Pascal supports the standard $JOB and $DATA cards which respectively signal the start and end of a job.
- The library inclusion facility is available for incorporating source and/or data cards into the input stream. (A $INCLUDE card is used to specify the file to be used.)
- scratch files. Four scratch files are supported. The characteristics of these files are fixed and cannot be changed by the user. Card image, line printer files and files containing a large record size are supported.
- read only files. Users can effectively open a member of the HSJS library for input and tie it to a filename.

Additional details on Waterloo Pascal are contained in USERBOOK Module 3.6HSWPASCAL. Users who subscribe to USERBOOK may request copies of this module. All other users may obtain this manual from the Information Office or by contacting their CSR.

The Waterloo compiler is also available through Batch by using the following deck setup:

```
// EXEC HSJS
//GO.SYSIN DD *
$JOBP ID='TEST'
  Pascal program
$DATA
  data
```

*Mark Tapia*

# NEW SORT MERGE AVAILABLE

UTCS upgraded its Sort/Merge capability to Release 4.0 of the IBM Sort/Merge program product on February 1.

There are 3 main points of interest for the user in this new sort:

1. A new sorting technique, BLOCKSET, will be used for fixed length records. This is a more rapid sorting technique and should save the user some expense, the amount depending on the nature of the data.
2. There is improved handling of SORTIN/SORTOUT files and this can reduce the costs of small sorts because of the large reduction of input/output operations.
3. ABEND dumps are no longer automatically produced. The Sort/Merge package is generally a very stable product though, like any other program, it may fail from time to time. If this happens in the future, the user will no longer see a massive and useless 'core dump.' The latter can be especially frustrating if the sort job abended, i.e., with a B37 (lack of space) in the output dataset. Much paper is wasted for an obvious error that needs little diagnosing.

Users with their own procedures should be aware that the minimum storage require-

continued...

**NEW SORT MERGE AVAILABLE** continued

ment for Sort/Merge is now raised from 32K to 48K. Users of UTCS Sort/Merge procedures need not concern themselves with this.

*Herb Kugel*

# DECSYSTEM-10 NEWS

## New Manuals for TOPS-10 7.01

Digital's release of version 7.01 of the TOPS-10 operating system is being accompanied by three new manuals which will be of particular interest to knowledgable users of the DECsystem-10. They are:

1. Operating Systems Command Manual, a reference manual describing all system commands in detail
2. Monitor Calls, Volume I, an introduction to the use of TOPS-10 monitor calls
3. Monitor Calls, Volume II, a detailed reference manual of all monitor calls

The first document above would be useful for frequent users of the DEC-10 who wish to increase their level of expertise. The other two are aimed primarily at DEC-10 assembler language programmers.

Although the above manuals are not yet in stock users are invited to place an order with the UTCS Information Office, room 206, Engineering Annex building (telephone 978-4990).

## DEC-10 Manuals for Half Price

However, there are presently in stock a number of manuals which will also be of interest to DECsystem-10 users. They are listed below. Because many of these manuals are old or have been superceded, they are being sold at half their original price. In spite of this, the information they contain is still valuable. Interested users should contact the Information Office.

| * Title | Order No. |
|---|---|
| APLSF Language | AA-H200A-TK |
| *APLSF Prog. Reference | D10-LPLSA-A-D |
| *BASIC Language | D10-LBLMA-A-D |
| BASIC Reference Card | D10-XBRCA-A-D |
| *Beginner's Guide to Batch | D10-LPLSA-A-D |
| COBOL-68 Language | AA-5057A-TK |
| COBOL-68 Update (v.12) | AA-5057A-T1 |
| COBOL-68 Update (v.12A) | AA-5057A-T2 |
| COBOL Reference Card | D10-OCRCA-A-D |
| *COBOL Prog. Reference | D10-LCPRA-B-D |
| FORTRAN Reference (v.6) | (TBA) |
| *GALAXY Batch Reference | D10-OGBRA-A-D |
| *GALAXY Operations Proc. | D10-OMCRB-A-D |
| *LINK-10 Reference | D10-UKLMA-B-D |
| *MACRO-10 Assembler | D10-LMCOA-A-D |
| Monitor Calls I | AA-0974D-TB |
| Monitor Calls II | AA-K039A-TB |
| *Monitor Calls Card | D10-OMCRB-C-D |
| Operating System Commands | AA-0916D-TB |
| *SORT/MERGE Users's Guide | AA-0997D-TB |
| *System (Hardware) Reference | D10-XSRAMA-A-D |
| Utilities | D10-UTILA-A-D |

* - on sale at half original price

*Dr. Edmund West*

# ATMS NEWS

ATMS, now one of the services offered by UTCS, has shown itself to be an effective replacement for ATS. Courses which introduce this full-screen editing tool to novice users have been fully attended and well received. Users of ATMS from 3270 terminals (where ATMS' full-screen editing facilities are available) have been generally pleased with these facilities. It is anticipated that planned changes in UTCS hardware will make ATMS with full-screen editing available to an increasing number of users.

Several further changes to ATMS services are being planned and are outlined below:

1. To allow the University community to fully utilize facilities for ATMS, UTCS has decided to reduce the maximum charge for connect time for ATMS to $3,000 per SAC per fiscal year. This figure is a reduction from the previously announced $4,000 and will take effect on a pro-rated basis for the current year, i.e., a maximum of $2,000 will apply for the eight months of service to the end of the current financial year. The hourly rate of $5.00 will remain unaltered.

2. In order to bring ATMS into line with other services, UTCS will resume the practice applied under ATS whereby any offline activity involving tape mounts (which does not generate any charge at the present time) will be charged at the rate of $10. This practice takes effect on February 1st, 1981.

3. IBM has provided the option of using two different formatters within ATMS-III -- the ATMS formatter or a new formatter called DCF. The ATMS formatter is the only one currently offered within ATMS by UTCS. But the new DCF formatter will provide many new formatting facilities which are not available with the ATMS formatter such as two column output, footnotes, spelling checking, index and table of contents generation and other features. UTCS is planning to install the DCF formatter within a test version of ATMS and then to evaluate it. If the formatter proves to be practicable it will be offered to ATMS users as an alternative to the ATMS formatter.

4. A scheme has been established whereby all IMS candidate printers may be used from ATMS. The current scheme is not as elegant as we would like. However, once users and UTCS have obtained some experience with the current mode of operation, improvements are anticipated.

5. UTCS has begun to construct a help facility for ATMS users. Users may get more information about this facility by typing the ATMS command "exec;help:0;;;;help".

6. UTCS recently installed a new release of ATMS. Although most of the changes present in the new release simply fix problems found in the previous version, one useful change has been made in the ATMS command language -- users can now use a separator of their choice when issuing a "find" or "replace" command. For example, it is now possible to type "f/;old" to search for the string ";old". Likewise it is possible to say "r/;old/?new/" to replace the string ";old" by the string "?new".

Contact your CSR for more information on any of these changes.

*John Bradley*

## TEXT PROCESSING

We have received a number of queries from administrators responsible for users of computerized text processing. The questions are often the same and deal with topics like suitability of particular systems, methods of data entry, facilities for flexible output devices etc. In an attempt to provide an overall explanation of UTCS' offerings in these areas and with a view to providing possible solutions, we are proposing to run a course for office administrators or office managers.

Anybody interested in such a course should call Kathleen Sloan at 978-4548. It should be emphasized that, at the moment, no definite time for this course has been established. We are awaiting response to this article.

*Dr. Frank Spitzer*

## HUMANITIES INTEREST GROUP MEETINGS

The Humanities User's Group, to be known in future as the Humanities Interest Group, was addressed on the 20th of October by Professor Angus Cameron and Professor Ashley Amos on the topic: Dictionary of Old English and the Computer. The audience was regaled with history and some humour concerning experiences humanists have had while trying to do business with a highly technological device. In general it appears that even the English language of 2000 years ago can be made more intelligible by the use of today's computers.

Anybody wishing to be on the mailing list for the Humanities Interest Group should contact me at 978-4619. The next meeting is **Friday, February 27, 1981** at which time guest speaker Professor Peter Roosen-Runge, Computer Science - York University, will speak on, "What Does the Computer Mean to Humanistic Disciplines?" (No reservations are required.)

**Location:** Room 347, McLennan Physical Laboratories, 66 St. George St.

**Time:** 2:00 pm

Interested persons requiring more information should contact either myself or Professor J. Hurd at 978-3056.

*Dr. Frank Spitzer*

## COMPUTER USER'S COMMITTEE

The Computer User's Committee meets regularly from 4 to 6 pm on the first Monday of each month. Meetings are held in the Engineering Faculty Council Room, Galbraith Bldg., Room 202. The Chairman is Professor John Hurd. Dr. Frank Spitzer is the Secretary.

Minutes of the meetings are available to anyone interested. Call 978-4619 for details.

The most recent meeting was Monday, February 2, 1981. The *next* meeting is Monday, March 2, from 4 to 6, at a different location: Medical Sciences Building, Room 2172.

*Kathleen Sloan*

# PERSONAL PREPAID ACCOUNTS

UTCS has been in the process of reexamining its charging policy with respect to holders of personal prepaid accounts. Many users in this category are members of the university community - students, staff and faculty - and we believe some are using UTCS computing services solely for the purpose of self-education.

If this describes your situation, apply to Accounting Services for a reduced rate. Application forms may be picked up in Room 206, Engineering Annex building. A new CAN will be set up to allow your account to be charged the normal 100% university rate. SACs, of course, may be transferred to the new CAN.

Please be aware that this policy change became effective January, 1981. No rebate will be given for usage prior to the date of application for the discounted rate.

*Margaret Doherty*

# ERRATUM

Last month's *COMPUTERNEWS* contained the following error: on page 16, in *Electronic Mail: Computer-Based Message Systems,* APL documentation was said to be available in library 750. In fact, this documentation is available in library 7540.

*Paul Shindman*

# PERSONNEL CHANGES

This month Glen Bethanis is transferring from Administrative Computing to BIS. Bernie Ogino has left the Text Services Group for a new position outside the University. David Sansom has also left UTCS Academic Computing for 'greener pastures.' Derry Cox, Operations Manager, left UTCS on February 6 after nine years of service, to work at the Bank of Nova Scotia. He will be greatly missed and we wish him, Bernie, Glen and Dave good luck and great success for the future.

Kathleen Sloan from the Management Office has been promoted to Bernie's former position and we extend congratulations to her.

Welcome Mary Ann Lawry to the Services Support Group as of February 1 and Bob Lawson who joined the Systems Group as of January 4, assuming Greg Hill's responsibilities.

*Theresa Veira*

# NEW TITLES IN THE DCS LIBRARY

Anderson, Robert Brockett.
Proving programs correct.
New York, Wiley, 1979.

Albrecht, J., ed.
Constructive methods for
nonlinear boundary value problems
and nonlinear oscillations, ed. by
J. Albrecht et al.
Basel, Birkhauser Verlag, 1979.

AMR International, Inc.
Data communications network design.
New York, AMR, 1979

Auerbach Publishers.
Data communications management.
Pennsauken, N.J., Auerbach, 1976 - 1 v.

Bayer, R., ed.
Operating systems: an advanced
course, ed. by R. Bayer, R.M. Graham
and G. Seegmuller.
Berlin, Springer-Verlag, 1979.

Cheney, W. and Kincaid, D.
Numerical mathematics and computing.
Monterey, Cal., Brooks/Cole Pub. Co., 1980.

Data Communications Synposium, 6th,
Pacific Grove, Cal., Nov. 1979.
Proceedings.
New York, IEEE, 1979.

EUROSAM '79, Marseille, France.
Symbolic and algebraic computation,
ed. by E.W. Ng.
Berlin, Springer-Verlaag, 1979.

Ferrante, Jeanne.
The computational complexity of
theories, by J. Ferrante and
C.W. Rackoff.
Berlin, Springer-Verlaag, 1979.

Fishman, George S.
Principles of discrete event simulation.
New York, Wiley, 1978.

Gane, C.P. and Sarson, T.
Structured systems analysis: tools and
techniques.
Englewood Cliffs, N.J., Prentice-Hall, 1979.

Gear, Charles William.
Applications and algorithms in computer
science.
Chicago, Science Research Assoc., 1978.

Gelenbe, E. and Mitrani, I.
Analysis and synthesis of computer
systems.
London, Academic Press, 1980.

Graybeal, W.J. and Pooch, V.W.
Simulation: principles and methods.
Cambridge, Mass., Winthrop, 1980.

IBM Symposium on Mathematical Foundations
of Computer Science, 5th, Hakone Yama no
Hotel, Japan, May 1980.
Computational complexity.
Tokyo, IBM Japan, 1980.

IMACS (AICA) International Symposium
on Simulation Software and Numerical
Methods for Differential Equations,
Virginia Polytechnic Institute, 1977.
Numerical methods for differential
equations and simulation. A.W. Bennet
and R. Vichnevetsky, eds.
A.W. Bennett and R. Vichnevetsky, eds.
Amsterdam, North-Holland, 1978.

International Conference on Very Large
Data Bases, 4th, West Berlin, Sept. 1978.
Proceedings, ed. by S.B. Yao.
New York, IEEE, 1978.

Levy, Henry M. and Eckhouse, R.H., Jr.
Computer programming and architecture:
the VAX-11.
Bedford, Mass., Digital Press, 1980.

Lister, Andrew M.
Fundamentals of operating systems.
2d ed.

continued...

**NEW TITLES** continued

London, Macmillan, 1979.

Nora, Simon and Minc. A.
The computerization of society: a report to the President of France.
Cambridge, Mass., MIT Press, 1980.

NYU Symposium on Database Design, New York University, May 1978.
Proceedings.
New York, University, Graduate School of Business Administration, 1978.

Robinson, John A.
Logic: form and function: the mechanization of deductive reasoning.
Edinburgh, University Press, 1979.

Symposium on Recent Advances in Numerical Analysis, Madison, Wisc., 1978
Recent advances in numerical analysis, ed. by C. de Boor and G.H. Golub.
New York, Academic Press, 1978.

U.S. Dept. of Defense.
Reference manual for the Ada programming language: proposed standard document.
Washington, D.C., U.S. Gov't. Print. Off., July 1980.

Weinberg, Victor.
Structured analysis.
Englewood Cliffs, N.J., Prentice-Hall, 1980.

World directory of mathematicians.
5th ed.
Uppsala, Sweden, International Mathematical Union, 1974.

## User Exchange Column

Beginning next month, *COMPUTERNEWS* will feature a monthly exchange column for our user community. This column will allow users who wish to acquire or dispose of software or hardware to place a small notice in *COMPUTERNEWS* notifying other users at U of T.

This feature is being tried out to provide users with a forum for exchange of computer material. As such, no commercial advertising will be accepted. Users with a terminal they would like to get rid of, a program they would like to acquire, a meeting they would like to announce, etc. should mail their request to:

User Exchange Column

COMPUTERNEWS - UTCS

Room 201, Engineering Annex

UTCS reserves the right to select appropriate items only.

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___ Check here if you can receive COMPUTERNEWS by campus mail.

Return to:

University of Toronto Computing Services,
Information Office,
Room 206,
11 King's College Road
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M5S 1A1

# UTCS SYSTEMS

## 3033/N8A PROCESSOR

- located in McLennan Physical Laboratories
- provides General Purpose Job Stream, High Speed Job Stream, TSO, WYLBUR
- 8 megabytes of memory
- MVS with JES2

## 3033/N8B PROCESSOR

- located in McLennan Physical Laboratories
- provides administrative IMS/VS DB/DC Batch, TSO, MVS/APL and ATMS services
- 8 megabytes of memory
- MVS with JES2

## DECSYSTEM-10 Model 1090

- located in McLennan Physical Laboratories
- provides General Purpose Time-Sharing
- 256 K - 36 bit words of memory
- TOPS-10 operating system

## COMMUNICATIONS & SMALL SYSTEMS (CSS)

- located in SF308
- DEC GT44 System with PDP-11/40 CPU
- 2 Z80 based microcomputers
- Radio Shack TRS-80
- Western Digital Pascal MicroEngine
- Apple II Plus
- DEC GT40 System with PDP-11/05 CPU
- provides specialized graphics and interactive graphics
- provides online and real-time computing services, data acquisition and minicomputer services

# UTCS DIRECTORY

| POSITION | ROOM | CENTREX PHONE NUMBER |
|---|---|---|
| **Director** | | |
| Dr. Doron Cohen | MP350 | 8948 |
| **Associate Directors** | | |
| Rein Mikkor | MP350 | 5058 |
| Al Heyworth | MP350 | 4936 |
| **Faculty Liaison Officer & Manager, Text Services** | | |
| Dr. Frank Spitzer | MP350 | 4619 |
| **Manager, Communications & Small Systems** | | |
| Eugene Siciunas | MP350 | 4967 |
| **Manager, Operations** | | |
| Derry Cox | MP350 | 7092 |
| **Manager, Systems** | | |
| Ward Beattie | MP350 | 3579 |
| **Manager, Academic Computing Services** | | |
| Ralph Lombardi | MP350 | 7130 |
| **Manager, Administrative Computing Services** | | |
| Bill Lauriston (Acting Manager) | SG201 | 6877 |
| **Manager, Services Support** | | |
| Don Gibson | MP350 | 5568 |
| **Administrative Officer** | | |
| Suzan Fawcett | MP350 | 4428 |
| **Information & Accounting Office** | | |
| General Inquiries | EA206 | 4990 |
| **Accounts** | | |
| Aggie Stevens (U of T) | EA206 | 8702 |
| Sylvia May (External) | EA206 | 7148 |
| **Supervisor, Accounting & Information Services** | | |
| Marg Doherty | EA206 | 3960 |
| **Access Codes** | | |
| Michelle Mulé | EA206 | 8703 |
| **Supervisor, Communication Systems** | | |
| Walter Rosocha | SF302 | 7087 |
| **Programming Services** | | |
| Bill Lauriston | SG201 | 6877 |

## UTCS SYSTEMS continued

### Entry Services

| | | |
|---|---|---|
| Supervisor | | |
| Vera Cabanus | MP331 | 5040 |
| Text Entry | | |
| Dale Wright | MP331 | 4565 |
| Data Entry | | |
| Zelda Anderson | MP331 | 5273 |
| Keypunching | | |
| Dale Wright | MP331 | 4565 |

### Tape Librarians

| | | |
|---|---|---|
| Academic Services | MP368 | 7319 |
| Administrative Services | MP368A | 6693 |

### Supervisor, Applications

| | | |
|---|---|---|
| Herb Kugel | SG304 | 7286 |

### Computing Services Representatives

| | | |
|---|---|---|
| Engineering Annex Terminal | | |
| Sue Chong | EA104 | 4357 |
| Program Advisors | EA103 | 4516 |
| Time-Sharing Support | | |
| TS Advisors | SG204 | 6465 |
| John Mavity | SG204 | 7109 |
| Erindale | | |
| Peter Wall | 2043 | 828-5311 |
| Scarborough | | |
| Bob Blackburn | | 284-3173 |
| Arts and Science | | |
| Bill Fehlner | SS2133 | 6509 |
| New Physics | | |
| Bob Chambers | MP1202 | 8823 |
| External | | |
| Ihor Prociuk | SG205 | 6875,6885 |

### Supervisors, Operations

| | | |
|---|---|---|
| Paul Scarborough (IBM 3683N8A) | MP335 | 6220 |
| Krishna Patnaik (DEC-1090 & CSS) | MP368 | 4086 |
| Dave Wong (IBM 3033N8B) | MP368 | 6864 |

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**Key:**

EA = Engineering Annex
SG = 49 St. George
HU = 215 Huron St.
MP = McLennan Physical Laboratories (New Physics)
SF = Sandford Fleming
SS = Sidney Smith

### Job and System Status Queries

| | |
|---|---|
| SYSTEM/3033,TSO | 7373 |
| ATMS/APL | 6234 |

| **Time-Sharing Services** | **Dial-Up** |
|---|---|
| APL,ATMS | 7200 Centrex<br>7201 Non Centrex |
| TSO,WYLBUR | 6200 Centrex<br>6201 Non Centrex |
| DEC-10 Services | 4224 Centrex<br>4244 Non Centrex |
| PHONE-IN ADVISING | 6465 |

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